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Application No. : **2,438,389**
Owner : NEC INFRONTIA CORPORATION
Title : **FAST ROAMING SYSTEM**
Classification : H04Q 7/38 (2006.01)
Your File No. : **64768-386**
Examiner : Xiaoyun Hu

YOU ARE HEREBY NOTIFIED OF A REQUISITION BY THE EXAMINER IN ACCORDANCE WITH SUBSECTION 30(2) OF THE *PATENT RULES*. IN ORDER TO AVOID ABANDONMENT UNDER PARAGRAPH 73(1)(A) OF THE *PATENT ACT*, A WRITTEN REPLY MUST BE RECEIVED WITHIN 6 MONTHS AFTER THE ABOVE DATE.

This application has been examined as originally filed.

The number of claims in this application is 14.

The search of the prior art has revealed the following:

References applied

United States Patents

5,875,186	23 February 1999	IPC ⁶ H04Q 7/20	BELANGER et al.
5,790,536 □	4 August 1998	IPC ⁶ H04Q 7/24	MAHANY et al.

European Patent Office Application

EP 1 172 969 A2 □	16 January 2002	IPC ⁷ H04L 12/28	TAKAYAMA et al.
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□ citation stemming from a foreign search report

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BELANGER et al. disclose a dynamic local area network which allows a mobile unit to determine which access point unit provides the mobile unit with the best communications as the mobile unit roams within an area and from area to area.

MAHANY et al. disclose a hierarchical communication system wherein wired and wireless communication networks exhibiting substantially different characteristics are employed in an overall scheme to link portable or mobile computing devices.

TAKAYAMA et al. disclose a high-speed roaming method for a wireless local area network wherein when the radio beacon of the connected access point is low, new access point having the best radio conditions is selected based on the hopping information of the neighbouring access point.

Obviousness

Claim 1 defines a fast roaming system wherein a mobile terminal communicating with an access point can be quickly switched from the parent station to an adjacent access point. BELANGER et al. disclose a dynamic local area network wherein the mobile unit receives updated information about other access points in the area (APTable) after it establishes a connection with an access point unit (abstract; column 24, lines 43 to 52; column 27, lines 29 to 38). The mobile unit performs scans and records the information it gathers of all of the access point units within range in its local copy of the APTTable, and forwards any new information collected to the serving access point unit at the end of each scan (column 28, lines 27 to 35). When the quality of service degrades, the mobile unit is able to switch quickly to a new access point unit based on the information in the APTTable (column 26, lines 2 to 33). The roaming operation is based on the IEEE 802.11 specifications (column 31, line 60). Therefore, the subject matter of claim 1 would have been obvious on the claim date to a person skilled in the art in view of BELANGER et al.

Claim 2 depends on claim 1 and defines the additional feature of the mobile terminal providing a roaming order which is used to sequentially select a roaming destination. BELANGER et al. fail to disclose this feature explicitly, although it is implied (column 24, lines 53 to 59). In addition, this particular feature is disclosed by TAKAYAMA et al. (paragraph [0052]). Therefore, the subject matter of claim 2 would have been obvious on the claim date to a person skilled in the art in view of BELANGER et al. and common knowledge of TAKAYAMA et al.

Claims 3 to 7 depend on claim 2 and define the additional features of assigning roaming orders to the peripheral access points according to the signal reception levels; the number of mobile terminals connected to an access point; the error ratio; the communication ratio; and adding predetermined weights to these parameters. BELANGER et al. fail to disclose these features explicitly. However, these features are either disclosed by TAKAYAMA et al. (paragraphs [0050] and [0052]) or MAHANY et al. (column 29, lines 27 to 32; column 30, lines 61 to 65; and column 31, lines 35 to 40), or are of common knowledge to a person skilled in the art of wireless communications. Therefore, the subject matter of claims 3 to 7 would have been obvious on the claim date to a person skilled in the art in view of BELANGER et al. and common knowledge of TAKAYAMA et al. and MAHANY et al.

Claim 8 depends on claim 1 and defines the additional feature of starting the roaming operation when the reception level of the signals from the parent access point is lowered continuously during a number of scans. This particular feature is disclosed by MAHANY et al. (column 31, lines 23 to 26). Therefore, the subject matter of claim 8 would have been obvious on the claim date to a person skilled in the art in view of BELANGER et al. and common knowledge of MAHANY et al.

Claim 9 depends on claim 8 and further defines that the roaming operation is started when a reception level received from a peripheral access point is higher or equal to a predetermined value. This particular feature is of common knowledge to a person skilled in the art of wireless communications systems. Therefore, the subject matter of claim 9 would have been obvious on the claim date to a person skilled in the art in view of BELANGER et al. and common knowledge of MAHANY et al.

Claim 10 depends on claim 1 and defines the additional feature of starting the roaming operation when the error ratio is larger than a predetermined error ratio. This particular feature is disclosed by MAHANY et al. (column 31, lines 21 to 26). Therefore, the subject matter of claim 10 would have been obvious on the claim date to a person skilled in the art in view of BELANGER et al. and common knowledge of MAHANY et al.

Claim 11 depends on claim 1 and defines the additional feature of scanning for peripheral access points after a contention-free period is over and when the mobile terminal does not receive or transmit data. This feature is disclosed by BELANGER et al. (column 15, line 59 to column 16, line 47; column 24, lines 53 to 59; and column 27, lines 39 to 64). Therefore, the subject matter of claim 11 would have been obvious on the claim date to a person skilled in the art in view of BELANGER et al.

Claim 12 depends on claim 1 and defines the additional feature of synchronise access points by defining a master access point which provides the other access points with synchronisation messages. This feature is disclosed by BELANGER et al. (column 21, lines 28 to 32). Therefore, the subject matter of claim 12 would have been obvious on the claim date to a person skilled in the art in view of BELANGER et al.

Claim 13 depends on claim 12 and defines the additional feature of performing passive scans when the mobile station is neither transmitting nor receiving data. This feature is disclosed by BELANGER et al. (column 24, lines 53 to 59; column 27, lines 39 to 64). Therefore, the subject matter of claim 13 would have been obvious on the claim date to a person skilled in the art in view of BELANGER et al.

Claim 14 depends on claim 13 and defines the additional feature of performing active scans when the passive scanning fails. Although BELANGER et al. fail to disclose this feature, it is disclosed by TAKAYAMA et al. (paragraph [0007]). Therefore, the subject matter of claim 14 would have been obvious on the claim date to a person skilled in the art in view of BELANGER et al. and common knowledge of TAKAYAMA et al.

Claims 1 to 14 do not comply with section 28.3 of the *Patent Act*.

Indefiniteness

In claim 1 (line 10), a reference is made to the IEEE 802.1113 specifications. However, no such specification exists.

In claim 11 (lines 3 to 4), the expression "which are included both a beacon signal and a probe response" is ambiguous. It is unclear what is the relationship between a beacon signal and a probe response and the access point search unit of the mobile terminal.

In claim 13 (line 5), the term "correlation" has no antecedent.

Claims 1, 11 and 13 are indefinite and do not comply with subsection 27(4) of the *Patent Act*.

Description and drawings

On page 3, lines 4 to 5, reference is made to two documents which are not fully identified.

Under subsection 81(3) of the *Patent Rules*, applicant must fully identify the documents referred to in the application. A document so referred to should be identified by country, number and date for published patent documents, or by title, author, date, and source for non-patent documents.

The following reference characters in the drawings are not mentioned in the description:

Figure 1: "4-C";
Figure 10: "11-B";
Figure 16: "11-G", "154G";
Figure 21: "27-M", "22-M", "24-M";
Figure 22: "22-P", "24-P", "27-P";
Figure 25: "16-H"; and
Figure 27: "15-J", "155-J", "16-J".

Reference character "2-C" on page 16 (line 22) is not in the drawings (see Figure 3).

The figures and the description do not comply with section 82 of the *Patent Rules*. Reference characters not mentioned in the description must not appear in the drawings, and vice versa.

Formalities

On page 3 (line 25) and page 6 (line 13), the expressions "the data are present" and "the data are obtained" should read "the data is present" and "the data is obtained" respectively.

On page 4 (line 1), the term "processing" should read "process".

On page 5,

line 2: the term "and that the thus" should read "and thus";
line 10: the term "a sort period of time" should read "a short period of time";
line 20: "IEEE 802.1113" should read "IEEE 802.11".

On page 7 (line 6), the term "the a" should read "the".

On page 13 (line 6), the reference character "AP search unit 3" should read "AP search unit 13".

On page 18 (line 3), the term "during this processing" should read "during this process".

On page 27 (line 28), the reference character "1-F" should read "1-E" (see Figure 14).

On page 37 (line 29), the term "the time added to the time" should read "the time added to the timer".

On page 38 (line 1), the term "referred to a reference time" should read "referred to as a reference time".

In view of the foregoing defects, the applicant is requested, under subsection 30(2) of the *Patent Rules*, to amend the application in order to comply with the *Patent Act* and the *Patent Rules* or to provide arguments as to why the application does comply.

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